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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KOEHLER, ROBERT R

ART UNIT PAPER NUMBER

1775

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/621,601

Applicant(s)

JOSEPH WIJENBERG ET AL.

Examiner

Robert R. Koehler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on November 4, 2003 (Prel. Amdt.).
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 17-41 and 58 is/are allowed.
6) ☒ Claim(s) 1-5, 10-16 and 42-57 is/are rejected.
7) ☒ Claim(s) 6-9 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

RRK

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07182003; 10312003.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: Information Disclosure Statement of 03172004.

RRK.

DETAILED ACTION***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in the European Patent Office (EPO) on July 24, 2002. It is noted, however, that applicant has not filed a certified copy of the European Patent Office (EPO) 0207 8054.0 application as required by 35 U.S.C. 119(b).

Specification

1. The disclosure is objected to because of the following informalities: The new section "Cross Reference To Related Application" on page 1 of the specification should be amended to indicate the correct filing status of S.N. 10/060,117 (now allowed). The Examiner respectfully suggests that the wording "(now pending)" in line 2 of the Cross Reference paragraph be deleted and the wording --, now U.S. Patent No. 6,796,484 B2-- be inserted immediately after the year "2002".

Appropriate correction is required.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In claim 20, the subject matter of "Si in the range of 5 to 12%" cannot be found in the specification. See paragraph **[0031]** on page 7 which states a silicon range of 5 to 14%.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In claim 23, the subject matter of "the aqueous plating bath further comprises a pyrophosphate as a complexing agent in a range of 0.2 to 2 M/l" cannot be found in the specification. See paragraph **[0025]** on page 6.

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4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In claim 33, the subject matter of "at least one member of the group consisting of sodium pyrophosphate and potassium pyrophosphate thereof in the range of 0.2 to 2 M/l as a complexing agent" cannot be found in the specification. See paragraph [0025] on page 6.

Claim Rejections - 35 USC § 102/ § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 43 and 51 to 57 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 3,242,565 (North, et al.).

North, et al. discloses an aluminum material joined to a stainless steel material by a nickel-tin alloy joint layer wherein the nickel-tin alloy layer is produced by electroplating a nickel layer onto the aluminum material and the stainless steel material, electroplating a tin layer onto each plated nickel layer, and forming a nickel-tin alloy bond layer between the two materials by immersing the assembled materials in a suitable hot oil bath in order to fuse the contacting tin coatings together. North, et al. states that the metal-fusion operation causes the tinned parts to fuse together to form a homogeneous metallic juncture and also causes the

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melted or fused tin plating to combine with the plated nickel layers to form a higher-fusing temperature nickel-tin alloy. The patent does not specify the amounts of nickel and tin in the resulting alloy joint layer, but each electroplated layer (i.e., Ni and Sn) must be at least 0.0003 inches in thickness ($\geq 7.62 \mu\text{m}$). Also, the patent requires that the aluminum and stainless steel parts be assembled without contamination. See line 52 in column 2 to line 49 in column 3, Figure 4, and Figure 5. The Examiner believes that the nickel-tin bonding layer disclosed by North, et al. would possess the same post-braze corrosion behavior as claimed by the applicants because the prior art bonding layer consists of an alloy having the same alloying elements (Ni and Sn) with elemental ranges that appear to overlap applicants' claimed alloy elemental range limits.

In the event any differences can be shown for the product of the product-by-process claim(s) 43 and 51 to 57, as opposed to the product taught by the cited reference North, et al., such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results. See also *In re Thorpe*, 227 USPQ 964. Any difference imparted by the product-by-process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the Examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that the claimed product is patentably distinct from the prior art product. See *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 to 5, 10 to 16, 42, and 44 to 50 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 17 and 20 to 28 of U.S. Patent No. 6,796,484 B2 (Wittebrood, et al.) in view of U.S. Patent No. 3,242,565 (North, et al.). Both sets of claims refer to a brazing sheet product comprising an aluminum core layer, an Al-Si cladding layer, a tin-containing nickel layer, and an optional bonding layer of zinc or tin between the outer surface of the Al-Si cladding layer and the nickel-tin alloy layer. Wittebrood, et al. claims a brazing product having a *filler metal composition* that is defined by the sum total of all alloying elements contained in the Al-Si cladding layer and the outer nickel-base layer, and the claimed "filler metal" composition overlaps applicants' claimed concentration ratios for nickel and tin in the claimed outer nickel layer. Regardless of the manner in which Wittebrood, et al. claims an aluminum-base brazing product, the Examiner points out that all of the product claims in the Wittebrood, et al. patent absolutely require a particular region of the brazing product claimed as the "filler metal" and having a claimed "filler metal" composition which must contain nickel and at least one element with a smaller exchange current density for the hydrogen evolution reaction (HER) than nickel (e.g., tin). A person skilled in the art of aluminum alloy brazing materials would expect the Al-Si cladding layer to have very low amounts of elements such as nickel and tin. The selection of tin as a component element in the filler metal can be clearly understood by referring to Table A in column 4 of the patent because tin possesses a sufficiently low exchange current density for the hydrogen evolution reaction (HER), and a sufficient amount of tin in the outer nickel layer reduces the catalytic effect for hydrogen evolution which, in turn, improves the corrosion performance of the brazed product. Both sets

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of claims also refer to an assembly of components comprising an aluminum-base member that is joined to a stainless steel member by a joining layer that contains nickel and tin. The claims of Wittebrood, et al. do not particularly specify the usage of a *layer* of nickel-tin alloy as claimed by the applicants. The North, et al. patent teaches a nickel-tin alloy joint layer between an aluminum-base member and a stainless steel member that is produced by electroplating a nickel layer on the surface of the aluminum-base member and on the surface of the stainless steel member, electroplating a tin layer on the plated nickel layers (see Figure 4), and immersing the assembled aluminum-base member and stainless steel member in a suitable hot oil bath having a temperature which fuses the contacting tin coatings together to provide a homogeneous connection (see Figure 5). During the high-temperature fusion step, the melted or fused tin plating layers combine with the nickel under-layers to form a higher-fusing temperature nickel-tin alloy, and this resulting nickel-tin alloy layer clearly joins the aluminum-base member to the stainless steel member. It would have been obvious to a person skilled in the art of aluminum alloy brazing materials at the time of the claimed invention to recognize the useful joining properties of a nickel-tin alloy *layer for an aluminum-base brazing product* having the metallurgical structure as claimed by the Wittebrood, et al. patent because a nickel-tin alloy layer performs the same bonding function as the "filler metal" region as claimed by the Wittebrood, et al. patent and a nickel-tin alloy layer is positioned between an aluminum-base substrate and another material (e.g., stainless steel) that is intended to be bonded to the aluminum-base substrate. A person skilled in the art of aluminum-base brazing materials would have been motivated to rely on the North, et al. patent because the nickel-tin alloy layer provides the bond (or joint) between an aluminum-base substrate and another material.

Allowable Subject Matter

Claims 6 to 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 17 to 41 and 58 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach, suggest, or disclose applicants' claimed method of manufacturing an aluminum-base workpiece by pre-treating the outer surface of the aluminum-base workpiece and electroplating a nickel-tin alloy layer on the aluminum-base workpiece by using an aqueous plating bath comprising nickel ions and tin ions. The Examiner believes that the prior art does not teach or reasonably suggest the simultaneous electroplating of nickel ions and tin ions onto an aluminum-base substrate. Also, the prior art does not teach, suggest, or disclose applicants' claimed method of using an aqueous electroplating bath for manufacturing nickel-plated products including the step of electrodepositing a nickel-tin alloy layer on an aluminum-base workpiece within an aqueous plating bath that contains complexing agents. The Examiner believes that the prior art does not teach or reasonably suggest the usage of an aqueous plating bath containing nickel ions, tin ions, and a complexing agent for manufacturing a nickel-tin alloy layer on an aluminum-base workpiece.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Robert Koehler whose telephone number is **(571) 272-1536**. The Examiner can normally be reached on Tuesday to Friday from 9:30 AM to 7:00 PM. The Examiner can also be reached on alternate Mondays.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on **(571) 272-1535**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).



ROBERT R. KOEHLER
PRIMARY EXAMINER

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February 11, 2005